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# WORLD PRODUCTION AND TRADE: TALLOW & GREASES

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# WORLD PRODUCTION AND TRADE: TALLOW AND GREASES

By John DeCourcy[1]

## INTRODUCTION AND SUMMARY

The United States is the world's major producer, consumer, and exporter of tallow and greases.

In the years since the end of World War II, a great many changes have taken place within the country's domestic rendering industry. There have been great increases in production as raw materials have expanded with increases in the nation's output of beef, poultry, and pork.

Domestic consumption has begun to rise in recent years in response to the development of new uses. Traditional outlets have been lost or reduced, and new ones have emerged. While tallow has virtually lost its U.S. market in laundry soap, it has more than made up the loss through development of the market for fats in animal feeds.

Increasing quantities of tallows and greases are being used for fatty acid production. Fat splitting has increased phenomenally in recent years and will probably continue to expand in the future, as the organic chemical industry expands.

The largest outlet, however, is the export market. The United States dominates the world tallow market, accounting for about two-thirds of world trade. Exports annually account for nearly one-half of U.S. domestic production. It is this outlet which shows the greatest potential for future growth. Overseas markets are also exercising an ever-increasing influence on the domestic market. Because of this influence, this publication will seek to point out existing conditions and trends in the world's major tallow producing and consuming countries.

Many of the changes which have occurred in the domestic market over the last 15 years are now being felt in most of the rest of the world. Detergent powders are becoming widely used and accepted in practically every country, replacing laundry bar soaps. On the other hand, as living standards and incomes rise, so does the consumption of higher quality tallow-based commercial toilet soaps.

Outside of North America, Europe, and Japan, there is little evidence of tallow's use in animal feeds, for fat splitting, or for other industrial purposes.

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In the industrialized countries, however, markets are expanding, but even as they expand, end-uses are changing. In nearly every country, tallow-based, or vegetable-oil based laundry soaps are being replaced by synthetic, detergent-type, products. Meanwhile, there appears to be a gradual rise in output of toilet soaps. Adding fat to animal feeds is on the rise in Europe and there are bright prospects for use of fat in feed in Japan. But there is little evidence of this practice gaining acceptance in other areas of the world at this time.

# INDUSTRY BY COUNTRY

## CANADA

Canada is one of the major producers and exporters of tallow and greases. Canadian tallow competes directly with U.S. tallow in many markets around the world.

Production.--There are about 70 plants producing tallow; most are directly associated with meat packing plants. There are in Canada several large, independent renderers comparable to those found in the United States.

Production has trended steadily upward over the last five years, increasing from around 200 million pounds in 1960 to about 260 million pounds by 1965. It is estimated that edible tallow represents about 20 percent of total production.

Grading is not emphasized as much in Canada as it is in the United States. Such grades as Bleachable Fancy and Bleachable, Prime, No. 1 and No. 2 are used; however, the specification for each may vary from one plant to another. There are no established grade standards to which producers must adhere. A similar lack of grading exists with edible tallow although strict sanitary regulations are followed. The edible product is produced only from animals slaughtered under government inspection.

Utilization.--The soap industry remains the largest user of tallow and greases. Total soap production has trended downward slightly in recent years, but less rapidly than output of detergent products has risen. Consumption of tallow in soapmaking has remained virtually constant.

The use of fat in animal feeds has progressed rapidly in recent years, having doubled since the 1957-59 period. Tallow is used in feeds for both cattle and swine, but to a greater extent in poultry rations.

Canada has a fat splitting industry using tallow as its major raw material.

Imports, Exports.--Canada has ranked among the world's major tallow exporters in recent years. The United Kingdom is the leading buyer, granting duty preference. Japan has increased its purchases in Canada over the last five years, to several times the 1956-60 average. Cuba began buying Canadian tallow in 1961 when trade relations between the United States and Cuba were severed. By 1964, Cuba had become Canada's third best customer; however, buying tapered off rapidly during the following year as the Island's economy became more troubled.

Canada imports small quantities of tallow, nearly all supplied by the United States. Import tariffs are applied at the following rates: General tariff agreement rate, 20 percent; Most-Favored-Nation rate, 17 1/2 percent; British preferential rate, free. Under special trade

agreements, Australian and New Zealand tallows are guaranteed duty-free access. Rough greases for the manufacture of soaps and oils only may enter free of duty. Most of Canada's international trade in tallow and grease moves in bulk shipments. Bulk handling facilities are located at most ports, including the Lake ports.

## MEXICO

Production.--Tallow production in Mexico is estimated at 49 million pounds per year; most is the product of home renderers. Production apparently does not change much from year to year. There are only 13 commercial rendering operations in Mexico, and total production is 3.5 million pounds. In addition, many small operators collect raw materials from butcher shops and restaurants, and render the scraps in home kitchens and backyards.

Because the domestically produced tallow comes from so many sources, quality is often a problem. In addition, tallow is rather expensive. The wholesale price in Mexico City rose from about 13 cents per pound in January 1964 to 29 cents per pound in the summer of 1965. Over the last five years, Mexican prices have averaged more than double those in the United States.

Utilization.--Tallow usage has been increasing slightly in recent years as a result of the increasing use of toilet soaps. Laundry soap production has also increased but there are no estimates of the quantity of tallow being used. Detergent production has increased 50 percent over the last five years. Raw materials for this industry come largely from the petroleum industry.

Imports, Exports.--The Mexican Government currently does not authorize importation of tallow. Small quantities, however, do appear in the trade statistics after 1960, when the import ban became effective. Before 1960, Mexico was a substantial market for U.S. tallow. It is probable that any future imports will be made by the government purchasing agency, CONASUPO.

## ARGENTINA

Production.--There are no official estimates of tallow production; however, output is thought to range between 250 and 300 million pounds, having been reduced in proportion to curtailed slaughter in 1964 and 1965. Perhaps as much as one-third is classed as an edible product. It has been estimated that about half of production comes from packing plants and half from rendering plants, mostly in the Buenos Aires area, with little recovery of raw material from the interior.

The three principal grades of inedible tallow traded are: slaughterhouse Extra, Number 1, and Number 2. Extra is generally considered comparable to U.S. fancy.

Utilization.--While no data exist on utilization of tallow and greases in Argentina, it has been estimated that 65 percent goes into laundry soap, 20 percent into toilet soap, the remaining 15 percent going into feed, candles, fatty acid production and other industrial uses.

Total output of soap in Argentina appears to have remained constant in recent years at about 500 million pounds. Synthetic detergents are produced but have not made substantial inroads into the soap market.

Imports, Exports.--Argentina is normally self-sufficient in production of animal fats, and usually has an export surplus, although exports are quite variable from year to year. Principal buyers in recent years have been Brazil, Chile, Colombia, and Italy.

Argentina is the only tallow exporter in the Latin American Free Trade Area (LAFTA) and enjoys a duty preference in most Member countries.

Although exports in 1964 were above the average of recent years, large quantities were imported from the United States in the second half of the year. Further purchases were made in the United States in 1965. The reinstatement of exchange controls and the maintenance of an artificially low official exchange rate encouraged imports and discouraged exports. High import duties and surcharges are waived in periods of shortage.

The Argentine government imposes a small export tax of 1.5 percent, and the Meat Board sets minimum export prices. In 1965 minimum bulk prices were set at 8.4 cents per pound and drummed at 9.3 cents per pound.

## COLOMBIA

Production.--Columbia's rendering industry produced about 60 percent of the tallow consumed in 1964. Output has been expanding at an average rate of about 2 1/2 percent per year, demand at a greater rate. Deficits have been partially made up by imports, but shortages persist. In 1965, lack of raw materials forced a temporary shutdown of several major soap plants.

Colombian tallow is almost exclusively the product of plants directly associated with slaughter facilities located in or near major cities.

Utilization.--About 90 percent of total output is classed as inedible and is consumed primarily by the soap industry.

Reportedly, tallow is not used in the mixed-feed industry. Fat is recognized as a valuable feed ingredient. However, because of the method of oil extraction used in Colombia, soybean and other vegetable oil meals contain a high percentage of oil, and there is no practical advantage to adding more fat.

Imports, Exports.--Colombia is a long-time customer for U.S. tallow. Most of Colombia's imports from the United States in recent years have been dollar sales, but some have taken place under P.L. 480.

Colombia imposes duties on imported tallow ranging from 20 percent to 30 percent. Import licenses are required. In addition, the importer must deposit up to 130 percent of the c.i.f. value of the the tallow, often using borrowed funds for which he must pay up to 15 percent interest.

Tallow is occasionally imported by INA, a quasi-governmental purchasing agency. Such imports are not subject to the duties applied to normal commercial imports.

All tallow is imported in drums. There are currently no bulk handling facilities. Plans are underway to construct bulk facilities in Cartagena or Barranquilla.

## ECUADOR

Production.--There is no commercial rendering. About 2 million pounds of animal fats are rendered each year at slaughterhouses for food uses and home soapmaking or candlemaking.

Utilization.--Soap production is the major outlet of tallow, having risen considerably over the last 5 years. Domestic soap production is divided into 80 percent laundry soap, 20 percent toilet soap. Commercial soap consumption is confined almost exclusively to urban areas, as a large segment of the rural population does not participate in the money economy. Detergents are not yet a factor, although their production is scheduled to begin in 1966 at a newly constructed factory.

Imports, Exports.--Large soapmakers depend on imported tallow and grease to maintain production. The United States is the major supplier despite LAFTA tariff concessions granted to Argentina.

Tallow imports have risen sharply in recent years. In 1964, imports reached a record 35 million pounds. In 1965, the Ministry of Industries and Commerce authorized imports in excess of 45 million pounds, a figure probably not reached.

To import, licenses are required from the Central Bank. Before the Bank will open the letter of credit, the importer must make a prior deposit of 15 percent of the c.i.f. value of the tallow, and he must pay 10 percent of the total tariff. Prior deposits may be borrowed from the Bank, interest free. Interest charges begin when the tallow arrives.

The tallow importer also pays a $6.50 per ton contribution to a program for the development of oilseed production conducted by the Ministry of Agriculture and Livestock.

The following duties are in effect for imported tallow:

| Item | Specific duty cents per pound | | Ad valorem percent |
|---|---|---|---|
| Raw tallow | 1.25 | plus | 30 |
| Denatured tallow | 1.0 | plus | 30 |
| Bleached, refined tallow | 2.0 | plus | 60 |

## EL SALVADOR

Production.--There is no established rendering industry. Tallow is produced by individual operators who buy small quantities of fat from slaughter plants, melt it over wood fires, and sell the resulting rendered product to soap factories. There is no collection of scrap from the usual sources in cities and towns.

Utilization.--Available figures indicate a very large proportion of tallow used in El Salvador--including all domestically produced--goes into soapmaking. It is estimated that 90 percent of this is used for laundry soap, 10 percent for toilet soap. Only a very small amount is being used for animal feed.

Imports, Exports.--Practically all the available supply is imported, with the United States the major supplier. Imports from the United States in recent years have ranged from 10 million pounds to 20 million pounds, about 90 percent of which is fancy grade, the remainder, extra-fancy. Imported tallow is bought directly by local soap factories, entering free of duty and without quantitative restrictions.

Tallow is imported in bulk. Storage tanks are located at the port of La Union. Rail cars transport tallow from the port to soap factories in San Salvador.

Prospects.--The feed industry is expected to expand gradually over the next few years, opening up a small additional market for tallow. By contrast, the soap industry is expected to increase its output by 10 to 15 percent per year over the next 3 to 5 years, as incomes and population continue to rise. Tallow consumption should rise at about the same rate.

## GUATEMALA

Production.--There are two rendering plants in Guatemala producing the bulk of the country's annual output of 7.5 to 8.0 million pounds of tallow. Production in recent years has remained relatively stable. It is related closely to the slaughter of beef cattle, most graded standard, commercial, canner and cutter. The yield of tallow is estimated at a relatively low 35 to 40 pounds per head. Most of the domestically produced tallow is designated "first class", a grade approximately equivalent to U.S. fancy.

Because practically all parts of an animal are considered edible, only a limited amount of trimming is done by butcher shops, hotels and restaurants. Thus, it is doubtful if production of tallow will be increased through supply of raw material, except by increasing beef production and slaughter.

Utilization.--Consumption of tallow is almost exclusively in soapmaking and is increasing each year. Imports from the United States make up practically all the deficit in domestic output. Since 1960, imports have risen from about 10 million pounds to about 20 million.

Tallow represents about 80 percent of the raw material used in manufacture of toilet soap and 70 percent of the raw material used for laundry soap. During the last 5 years, toilet soap production has risen 122 percent and laundry soap production 42 percent, while detergent output has increased nearly 550 percent. It is probable that detergents will, in future, displace some of today's tallow-based laundry soap.

Imports.--Imports licenses from the Ministry of Economy are required. There are no exchange controls. Importers are required to deposit 10 percent of import duties on tallow to build up a fund to establish an industrial bank. Contributors to the fund will receive bonds when the bank is established.

Until December 1964, all tallow was imported in drums. Since then, bulk facilities have been put into operation at the Caribbean port of Matias de Galvez with a capacity of 750 metric tons. Additional bulk storage is planned at Puerto Barrios for 1,350 metric tons.

As personal incomes rise in Guatemala, consumption of toilet soap is forecast to continue to rise also, particularly in the urban areas. Use of powdered detergents is also rising in urban areas where washing machines are used.

A mixed-feed industry exists in Guatemala and a small quantity of tallow is used in production of poultry feeds. No significant expansion is expected in the near future.

There is no fat-splitting industry in Guatemala.

## PERU

Production.--Production of tallow and greases ranges from 15 million pounds to 20 million pounds per year, about half of which is used by small soapmakers. The major soapmakers in the Lima area refine and bleach imported tallow, mostly fancy and extra fancy grade of U.S. origin.

Utilization.--There is a possibility that tallow will face increasing competition from hydrogenated fish oil in manufacture of laundry soaps, although there is no plan to make toilet soaps from other fats besides tallow. Hydrogenated fish oil is only slightly less expensive than domestically produced tallow, but costs less than half the price of imported tallow delivered to soap plants.

Imports, Exports.--While tallow imports have remained relatively constant, the imports of hog grease increased from practically nothing in 1960 to 47 million pounds in 1964, all from the United States.

Peru now imports tallow in bulk shipments of 300 to 500 tons. Imports of tallow have ranged from 5 million to 14 million pounds over the last 5 years, but have been near the lower end of this range for the past 3 years.

In spite of the duty advantage, tallow imports from LAFTA countries are declining because of high freight costs and other shipping difficulties.

Among duties and taxes to which imports are subjected, ad valorem duties, alone, vary from 20 to 30 percent of c.i.f. value on tallow and greases from non-LAFTA sources, and from 4 to 8 percent for imports from LAFTA countries. (Argentina is the only exporter of tallow in the LAFTA group.) Additionally, a 4 percent tax is assessed on cost of ocean freight of all imports. Specific duties per gross kilogram are also assessed.

## DENMARK

Production.--Denmark has a highly efficient rendering industry, operating in a manner similar to the U.S. industry. About 30 rendering plants produce technical types of tallow and greases from slaughterhouse byproducts and scraps, obtained from meat distribution channels and restaurants.

Because of the composition of Danish meat production, the greatest part of animal fat production consists of hog greases.

Strict sanitary regulations preclude the use of inedible animal fats in products for human consumption.

Utilization.--There has been a rapid increase in the use of tallow in feeds in Denmark in the last five years, as research has proven the value of adding fats to beef, veal, and poultry rations. No fat is at present used in hog feed.

The soap industry has dropped to the second largest tallow consumer since the increase in use of tallow in feed. The use of tallow in various types of soap has remained relatively constant in recent years, while there has been a rise in the use of synthetic detergents.

Imports, Exports.--Denmark is both an exporter and an importer of tallow and greases but on balance is a net exporter. The major export markets are the Netherlands and West Germany.

There are no restrictions on imports of inedible tallow or greases for industrial purposes. A license is required only for imports from Communist countries.

## EUROPEAN ECONOMIC COMMUNITY (EEC)

Under EEC regulations, a Common External Tariff (CXT) will eventually be applied by all Member countries to imports of tallow and greases. Members are Belgium, Netherlands, Luxembourg, France, Italy, and West Germany.

Under the terms of the Rome Treaty, the CXT is to become effective upon completion of the transitional period, that is, January 1, 1970 (or, at the latest, January 1, 1973). However, acceleration steps already taken indicate that this schedule will be advanced. Meanwhile, the tariffs of the individual member countries will continue to apply to imports into the EEC area. During this transitional period, the rates in those tariffs are scheduled to be moved in two more steps to the CXT.

The eventual level of duty in the EEC for animal fats, as described under Tariff Numbers 15.01 and 15.02, is shown below, along with the pre-GATT rate. Each of the six countries at the present time maintains its individual tariff schedule:

| Tariff number | Description | CXT Rates[1 2] Pre-GATT | GATT* |
|---|---|---|---|
| 15.01 | Lard and other rendered pig fat, rendered poultry fat: | | |
| | A. Lard and other rendered pork fat: | | |
| | I. Imported for other industrial purposes than the manufacture of foodstuffs | 4% | [a] 3% |
| | II. Other | 20% | |
| | B. Rendered poultry fat | 18% | 18% |
| 15.02 | Unrendered fats of bovine cattle, sheep or goats; tallow (incl. premier jus) produced from those fats. | | |
| | A. Imported for other industrial purposes than the manufacture of foodstuffs | 2% | [a] 2% |
| | B. Other | 10% | 10% |

*GATT: General Agreement on Tariffs and Trade.

[1] The pre-GATT rates are those published before the 1960-61 tariff negotiations, with the few adjustments later made by the EEC independently of the negotiations. The GATT rates reflect the concessions accorded during the negotiations.

[a] The underlined rates in the GATT column identify concessions obtained by the United States.

[2] The Common External Tariff (CXT) schedule consists primarily of ad valorem duty rates, with only a small number of specific duties.

## FRANCE

Production.--One of the leading producers in Western Europe, France has just over 100 rendering plants, about 25 percent fewer than in 1957. About 30 operate in association with slaughter plants, the others independently, collecting their raw materials from wholesale meat dealers, restaurants, and retailers. However, about 80 percent of production comes from plants associated with slaughter plants. Yield per animal is relatively low, since most French cattle are lean breeds with little fat waste to be trimmed.

Utilization.--Consumption of tallow by the soapmaking industry is decreasing, as in practically every industrialized country in the world. However, the soap industry continues to be the major outlet for the industrial animal fats. The competition from detergents is estimated to have cut the production of laundry soap 15 percent between 1960 and 1964; that of other types has either risen slightly or remained constant. Detergent production has risen 15 percent over the same period, it is estimated. Fatty acid production is thought to be relatively stationary, as is utilization of tallow in the food industry.

The use of fat in feed is gaining. Production of animal feeds is increasing yearly. About 600 firms of various sizes increased their total output from 2.2 million tons in 1960 to nearly 4.0 million tons in 1964. Poultry feed, the most promising outlet for animal fats, now comprises nearly one-half of total French feed production.

Imports, Exports.--Duties on imported tallow are levied on an ad valorem basis, calculated on the price of the tallow plus cost of transportation and other expenses connected with the sale and delivery of the tallow up to the point of entry.

A series of internal taxes and levies are applied both to domestic transactions and imports. Among these is the sales tax, called the "value-added tax", levied on imports and assessed on the c.i.f. duty-paid value.

## WEST GERMANY

Production.--There are about 60 modern rendering operations in West Germany; twelve are operating in conjunction with slaughter plants; most others procuring raw materials from the meat trade, restaurants, and the like.

Utilization.--The soap industry uses about 70 percent of the tallow consumed. Total soap use has remained relatively constant as displacement of tallow in laundry soap manufacture has been offset by gains in output of toilet soap. Production of detergents has been rising.

Tallow is consumed in the manufacture of margarine, and in commercial baking.

The growth of the animal feed industry has been steadily increasing in Germany, as elsewhere in Europe. Total production has risen from 3.6 million tons in 1960 to 5.6 million in 1964, and will reach 6.5 million tons by 1970, it is forecast. Use of animal fats in feed is increasing rapidly; it is expected to reach 50,000 tons by 1970.

West Germany is a leader in Europe in production of fatty acids and fatty alcohols. Nearly 9,000 tons of tallow are used annually in this way. Tallow faces stiff competition in this industry from other types of fats and oils. Germany exports between 60,000 and 70,000 metric tons of

fatty acid yearly. Most of the fatty acids consumed in Germany is used in the production of soaps. Germany's exports of fatty acids compete with U.S. tallow in many countries--particularly developing ones--where soap producers are not equipped to recover glycerine and consequently find use of fatty acid more economical.

Imports, Exports.--The sources of raw material in Germany are not sufficient to provide adequate tallow and greases to meet domestic industrial requirements. Thus, while West Germany is an exporter of tallow (mostly edible grades) and its derivatives, the country is also a large importer. In 1965, West Germany ranked fifth among the world's importers, and third among the exporters.

## ITALY

Production.--Although Italy remains one of the leading importers, its domestic production has risen as well. There are about 170 rendering plants, obtaining their raw material from meat wholesalers, retailers, hotels and restaurants (in major cities only). In smaller cities and towns, considerable material is discarded. At present, output ranges from 100 to 110 million pounds per year, it is estimated, and is rising slowly. Improved collections could conceivably raise production 20 to 30 percent.

Utilization.--As in most industrialized countries, use of tallow in soapmaking has been declining year by year as synthetic detergents take a larger and larger share of the laundry soap market.

Also, as in many countries, new uses have been developed that take increasing quantities of tallow.

Incorporation of animal fats in feed was virtually unknown in Italy in the early 1960's, but since 1962 has increased rapidly. The development has paralleled growth in the market for balanced formula feed rations for modernized poultry and livestock feeding operations. Most major feed manufacturers, representing over 60 percent of total feed output, now incorporate fats in their formula feeds.

The fatty acid industry is expanding each year, and is now consuming an estimated 10 to 12 percent of available tallow.

Imports, Exports.--Imports range from 200 to 270 million pounds, the bulk of which is of U.S. origin.

There may be up to 7 different taxes and duties applied to imported tallow as follows:

1. Import duty 0.6 percent applied to imports from countries other than EEC members.

2. The "Border Overtax": $0.42 per 2.2 kilograms if the titer is not above 30°C; not applied if material is imported for soap or if denatured.

3. The "Reconcilement tax": 1 percent of declared value for those types of tallow which are not raw.

4. The "administrative duty": 0.50 percent ad valorem.

5. The "statistical duty: 10 lira per quintal of weight.

6. The "IGE tax": 4 percent ad valorem. Might be described as a sales tax.

7. By law, inedible tallow is not to be reprocessed for human consumption unless a 10 percent tax is paid.

## NETHERLANDS

Production.--A total of 19 rendering plants in the Netherlands obtain their raw material from slaughterhouses and from meat wholesaling companies. In addition, there are numerous small operations obtaining raw material from hotels and restaurants, as well as quite a few butcher-renderers processing fats accumulated in their shops.

Utilization.--Domestic utilization has changed rather sharply in recent years. The use of tallow and greases in soapmaking has declined drastically while use in animal feeds has risen rapidly. Production of fatty acides from tallow and grease has varied from year to year but generally has trended upward. Output of laundry soaps has continued to trend downward but not as rapidly as production of detergents has risen.

Imports, Exports.--Domestic production of tallow and greases fluctuates with the availability of slaughter cattle and hogs. There is room for expansion, but the bulk of the demand will continue to be met by imports, of which the United States at present has the leading share.

The Dutch Government has taken a liberal position with respect to imports of tallow and greases, particularly those for refining and exportation. However, under EEC regulations, import charges will be adjusted gradually toward the fixed common level. Moreover, hog grease is subject to the variable levy system for pork.

## IRELAND

Production.--Tallow and grease production in Ireland has expanded with the growth of the meat industry that has taken place since the late 1950's. The country has become more than self-sufficient. About 9 different grades of tallow and grease are produced, including a stabilized fat for use in animal feeds.

Utilization.--As in all Western European countries, there has been a change in Ireland from consumption of animal fat-based laundry soaps to synthetic detergents. On the other hand, production of toilet soaps is expected to rise over the next decade. Reportedly, consumption of commercially-made soap in Ireland is the lowest in Western Europe.

Manufacturers of animal feeds are becoming more conscious of the value of adding fats to feed. Many broiler rations now contain tallow, and it is being incorporated with nonfat dry milk for use as calf starter.

Only small amounts of tallow are used in the manufacture of lubricants and there is no fat-splitting industry.

Imports, Exports.--Ireland is now on a net export basis, even though imports are made in years when production drops. Before 1955, Ireland imported all its tallow requirements from the United States.

Both tallow and lard are subject to import duties in Ireland as follows:

| Full rate per lb. | Preferential rate per lb. |
|---|---|
| 10.5¢ | 7.0¢ |

Animal oils and stearins can be imported free of duty, but are subject to Department of Agriculture license.

## UNITED KINGDOM

Production.--The United Kingdom is one of the largest European producers, partly as a result of its sizable imports of meat, which provide some of its supplies.

Nearly 370 firms render tallow and greases in the United Kingdom. Of these, 6 dominate the industry, 25 are medium-sized, and the rest are quite small (some producing only a few tons per month). Traditionally, the market structure has included a group of middlemen who collect the raw materials from meat packers and butchers and sell to renderers. Recently, the larger firms have begun to do their purchasing directly; this may in time reduce the role of the collectors and increase efficiency of the industry as a whole.

Production has increased moderately in the last few years and is at present about 300 million pounds. Because much of the domestic tallow is produced by small firms in small lots, maintaining consistent quality is difficult. Prices paid for locally produced tallow are usually below import prices for similar grades and tend to move in the same direction.

Utilization.--The soap industry continues to be the major user of tallow. Although consumption in the manufacture of laundry soap has declined in recent years as detergent production has risen, total consumption by the soap industry has risen.

The use of tallow in animal feeds has been increasing in recent years. The feed industry is quite price-conscious and will add or delete tallow as price dictates. It has been estimated that the feed industry consumed approximately 90 million pounds in 1964, although there are no official statistics available.

Imports, Exports.--Import statistics do not distinguish tallow from other fats by country of origin. However, about 85 percent of tallow imports come from Australia, New Zealand, and Canada because of the 10-percent Commonwealth duty preference these areas enjoy over imports from non-Commonwealth suppliers. Nevertheless, imports from the United States have been rising, and in 1964 were more than three times higher than the 1956-60 average.

## YUGOSLAVIA

Production.--Rendering in Yugoslavia is a small but old industry. There are about 40 rendering plants, most of which are associated with slaughterhouses. There is scope to expand the industry through improved methods of collection of scraps. The incentive to expand may be given impetus by higher world prices of tallow and greater domestic demand. The country now produces a rather wide range of types of tallow and greases, although production is limited by availability of raw material and efficiency of collection.

Utilization.--Consumption of tallow in Yugoslavia has remained relatively constant even though there has been a continuous rise in output of synthetic detergents. Per capita consumption of tallow-based soap has risen slightly as the population has grown. Increased soap consumption has been associated with rising living standards and migration from rural to urban areas.

Animal fats have been used in livestock feeds for about two years, but only in a limited way. There is no fat splitting industry and no reported reprocessing of inedible animal fats for human consumption.

Imports, Exports.--Yugoslavia is an importer of modest amounts of tallow, and has purchased U.S. tallow in recent years, both commercially and under P.L. 480.

## AUSTRALIA

Production.--Australia is the world's second largest producer of tallow. The meat industry not only supplies all of the nation's domestic needs, but also provides a large surplus quantity for export.

Australia's tallow output has risen at a more rapid rate than meat production during the last five years. The reason has been increased availability of material resulting from the rise in exports of lean, trimmed, boned beef. Formerly, this material was exported in the form of carcass beef and mutton.

For various reasons, beef tallow will probably drop below the record fiscal year 1965 level for the next several years. The cattle slaughtered in fiscal year 1966 were drought-affected and in poor condition. Over the long term, herd rebuilding will have an effect on numbers slaughtered. A further factor affecting production of tallow is the trend, evident in recent years, toward slaughter of younger, leaner cattle, both for home consumption and export.

While no official grades exist for tallow, the trade has developed classifications over the years, describing the range of tallow available. There are 2 grades of edible tallow and 9 of inedible. Inedible grades are determined largely on the basis of color and free fatty acid content.

Utilization.--Per capita consumption of tallow in Australia is relatively high. The principal outlet for inedible tallow is the soap industry, while most of the edible tallow is used in margarine manufacture. Consumption of inedible and edible, taken together, totaled nearly 350 million pounds in 1963-64.

Small quantities of edible tallow are used in meat canning, in manufacture of biscuits and in blending with vegetable oils, but these uses are small when compared with quantities used in margarine and shortening. Laws in most states require non-quota cooking margarine to contain a given amount of edible tallow, usually about 90 percent. Rising demand for margarine for household and industrial use has maintained a strong domestic market and created scarcity of some edible grades for export.

Domestic use of inedible grades is also increasing, partly because of increasing population, and partly because of increased industrial activity. As use of synthetic detergents increased, tallow consumption in the soap industry has trended downward. It is believed that it may have reached its lowest point and that a gradual expansion may begin to take place. Market researchers have reported that many European immigrants prefer traditional soap products to synthetic detergents.

Use by stockfeed manufacturers, and use in fat splitting, have both been increasing in recent years, while significant quantities are used in making lubricants and for other industrial purposes.

The Australian mixed feed industry has grown rapidly in recent years and has consumed increasing amounts of tallow. However, this is not expected to become a major outlet in the near future.

Fatty acid production has increased in recent years, in response to increased industrial demand for oleic and stearic acids. The industry enjoys high tariff protection, virtually insuring that future market growth will be supplied from domestic production.

Imports, Exports.--Australia is the second major world exporter. Australian export trade has grown rapidly since 1958, but now appears to be leveling off, and possibly declining, at least for the next few years. The percentage of boneless meat in total meat exports has dropped slightly with lowering of exports to the United States, reducing the amount of fat-bearing material available for domestic rendering. A drop in slaughter, at least a temporary one, is in the offing; also, there has been an increase in domestic consumption of tallow.

Exports consist, in the main, of inedible beef tallow. The largest buyers are Japan, South Africa, Mainland China, the United Kingdom, and Malaysia.

In recent years, progressively more Australian exports have been made in bulk form. It is now estimated that, overall, about 60 percent of tallow production is handled in bulk form. This development has increased the efficiency of the industry considerably. A significant proportion of the edible mutton tallow, "collarwhite mutton", is still handled in drums since the major buyers, India and Pakistan, lack bulk handling facilities.

In the export trade, classifications are usually more detailed than in domestic trade, and exporters customarily ship against specifications taking into account titer, free fatty acid, iodine value, and bleachability. Australian trade descriptions include--

For edible tallow:

Edible beef
Collarwhite mutton

For inedible tallow:

Industrial mutton
Bright prime mixed
Prime mixed
Good color mixed
Fair to good mixed
Fair color mixed
Good gut mixed
Medium gut
Low gut/no color

"Prime" implies light yellow color; "Good" is brownish, while lower color grades are increasingly darker; "no color" is too dark for color to be measured adequately.

## NEW ZEALAND

Production.--New Zealand is one of the world's major producers and exporters of tallow. Its largest markets are Mainland China, the United Kingdom, and Japan. In the United Kingdom and other Commonwealth countries, New Zealand enjoys preferential tariff treatment, but it is competitive in other countries.

There are about 67 rendering plants in operation in New Zealand, of which 37 are operating in conjunction with registered meat freezing works (plants approved for export meat packing). There are another 27 rendering plants operating either independently or in association with meat curing plants, fellmongeries, rural and municipal slaughterhouses.

The collection of meat scraps and other raw materials for rendering is efficient and well-developed. Probably little increase in production would be possible from collecting additional material now considered marginal.

The general trend of tallow production has been steady, reflecting the trend in volume of animal slaughter. However, there has been considerable fluctuation in production of edible tallow, while the output of inedible types has continued to increase regularly each year. As in Australia, these fluctuations are the result of shifts in the manner of preparing meat for export; i.e., whether shipped as carcass meat, or in the form of cuts and boneless manufacturing meat trimmed to 90 percent-visual-lean specification. With the shift in destination of exports from the United States to Western Europe has come a shift in the type of meat exported. Western Europe is a market for carcass beef, whereas exports to the United States consist largely of the leaner, boneless manufacturing type and boned primal cuts.

Further causes of fluctuation in production of edible grades of tallow have been the variations in weight and condition of cattle and sheep marketed during the peak period of fall slaughter, also, the availability and cost of new drums. Tallows that would otherwise be sold as edible are classed as inedible if packed in used drums.

Utilization.--In the New Zealand market, about 40 million pounds of tallow are required each year. Utilization in soapmaking is relatively constant, in contrast to declining use in most countries, in spite of the rising use of synthetic detergents. There has been some increase in utilization of tallow in food manufacture, and recently some firms have begun adding animal fats to poultry feeds. Fatty acids are imported.

Imports, Exports.--About 90 percent of New Zealand's tallow enters the export trade and prices tend to follow rather closely the trends in world market prices. In 1965, edible tallow sold for about $56 per long ton more than the best inedible grades. The bulk tallow discount was $28 per ton for edible beef and $8 to $10 for inedible. Freight rates are established conference rates. In 1965, the rate from New Zealand to Shanghai or Japan was $30.80 per long ton for drummed tallow, and $35.00 per ton to the United Kingdom. The bulk rate to Shanghai was $20.02 and $19.88 to Japan.

There are no official grades or specifications of tallow. A few grades have been developed by the trade over the years, largely for use in export trade. Bulk tallow, which accounts for about 75 percent of all exports, is exported in two inedible grades: "0.5 red" and "1.5 red".

Specifications are as follows:

| | 0.5 red | 1.5 red |
|---|---|---|
| Titer | 43°C. | 42°C. |
| Maximum FFA % | 2 | 1 |
| Maximum MIU % | 1 | 1 |
| FAC color | 9/13 | 17/19 |

Only a small quantity of edible tallow is exported in bulk form. The specifications are the same as those used in reference to tallow packed in drums.

Commonly used grades for drummed tallow entering export trade are A through K. A is edible beef and C is edible mutton; B and D are not used; E and F refer to 0.5 red shown above and G, H, and I fall within the specifications shown above for 1.5 red, bulk tallow; J is not in common use, and K refers to a no-color grade, FFA range 10-20 percent.

The commonly used edible specifications are as follows:

| | |
|---|---|
| Titer | 43°C. |
| FFA max. | 1% |
| MIU max. | 0.5% |
| FAC | 1/3 |

Drummed edible tallow must be packed in new drums or wooden casks. Most grade C, edible mutton, is currently being packed in used drums and sold as "inedible grade C."

## JAPAN

Production.--Japan's production meets only 10 percent of the country's rapidly rising needs. The other 90 percent must be imported. As a consequence, Japan is the world's leading importer, and also foremost U.S. customer.

Estimates of domestic production are based on cattle slaughter, the expanding rate of which largely reflects the rapid rise in dairy cattle numbers and slaughter at a younger age. Most tallow produced in Japan is considered edible and is comparable to edible grades produced in the United States.

The Japanese rendering industry is small and not well-organized. Of an estimated 300 rendering plants, many collect raw materials directly from slaughter plants. Only a few very small renderers pick up raw materials from restaurants, meat wholesalers, and retailers, as most meat is retailed with large amounts of fat on it. Little effort is made to collect scrap material from the many small restaurants in major cities and towns.

Domestic prices are more or less controlled by the price of imported tallow. Domestic tallow is generally priced $20.00 per ton above f.o.b. U.S. quotations. After freight, duty, and other handling charges are added, the two products are roughly equal in price.

Utilization.--Consumption of tallow and grease has been rising steadily over the past 5 years, although there continues to be a shift in usage. The soap industry remains the largest single outlet, though contracting each year. It has been estimated that 50 percent of urban

homes now contain automatic washing machines. Synthetic detergents are used increasingly in these machines, replacing tallow-based laundry soap. At the same time the use of hand soap has been expanding, but at a slower rate than the consumption of tallow-based laundry soap has been declining.

The mixed feed industry has expanded rapidly during the last 5 years. Production, currently over 7 million tons per year, may reach 12 million tons by 1970. Poultry rations, the most promising outlet for fat in feed, make up about three-fourths. Until now, however, only a small quantity of fat has been used in feed. The industry is just now becoming aware of its value. It is probable that the current level of fat prices has held back the expansion of this outlet of animal fats. If fat were to be added to poultry rations at the modest 3 percent level, Japan would require an additional 150,000 tons of animal fats at the current feed production level.

Imports, Exports.--Japan is the largest importer of tallow in the world and the market continues to expand. Tallow and grease imports have increased steadily in recent years, totaling 511 million pounds in 1965. Only 4 countries ship tallow to Japan in volume--the United States, Canada, Australia, and New Zealand, with the United States remaining the dominant supplier with 80 to 90 percent of the market. Australia's share varies considerably from year to year. In 1961, Australia supplied 11 million pounds; in 1963, 56 million pounds, and 9 million pounds in 1965. About 80 percent of Japanese tallow imports are extra fancy grade; most of the balance is bleachable fancy.

Tallow is imported under the Automatic Approval System. A license is required, but is granted automatically on application. The import duty is a modest 4 percent ad valorem. However, tallow for use as an ingredient in mixed feed enters duty-free. About 99 percent of all imported tallow is handled as bulk cargo, edible tallow being the only material entering by drum. Facilities for bulk handling are available at all major ports, although most tallow enters through Tokyo-Yokohama and Osaka-Kobe.

Japanese Government policy encourages livestock production. As a result, tallow production should increase gradually over the years. However, consumption is expanding at a greater rate. Thus, domestic production will represent an even smaller proportion of total consumption in future years.

# MARKET SURVEY BY AREA

In 1965, representatives of the National Renderers Association and the U.S. Department of Agriculture conducted a series of market surveys in the Mediterranean area, the Middle East, Africa, Latin America, and the Far East. Objectives were: to determine the present market for inedible tallow and other industry products (meat, bone and feather meals); among developing countries to appraise these markets in terms of future sales; to determine whether these markets were being well serviced in terms of timing of deliveries, quality of products received, and the like; and to make personal contact with present and potential customers for products of the U.S. rendering industry.

## AFRICA

The survey covered 9 African countries: Morocco, Senegal, Liberia, Ivory Coast, Ghana, Nigeria, Kenya, Rhodesia, and the Republic of South Africa.

There are few generalizations to be made concerning the market for tallow and animal protein for Africa as a whole. In general, it may be said that U.S. tallow is known in all countries as a superior product; also, that as individual African economies develop, and living standards rise, per capita consumption of better quality, tallow-based soaps will also rise; that market prospects in Africa for other rendering industry products are not as favorable; that the prospect of importing tallow for feeding purposes is years away in practically all of the countries surveyed; and that vegetable oils (palm and coconut) are now used extensively in soapmaking although they do not yield as high a quality of soap as does tallow.

Morocco.--Morocco has been a relatively small but steady market for U.S. tallow for many years, even though closely tied to France economically.

Although Morocco is considered a dollar market, its tallow imports from the United States over the last few years have been financed with foreign exchange provided by AID budget assistance funds. Without these funds, it will be difficult for Morocco to continue importing tallow at the current rate. As foreign exchange problems mount, import licensing will become more stringent and some decline in tallow buying can be expected.

Morocco itself produces very little tallow, although there are several rendering facilities in the country associated with municipal abbatoirs. These facilities produce only a small fraction of the country's requirements and the soap industry relies almost wholly upon imported raw materials.

There is no market at this time for fat in feed in Morocco. Possibly, in the future, modern feeding practices will be adopted that will make the use of fat in feed economically feasible.

Senegal.--Senegal is a small country with little potential for growth as a market. Trade ties with France are strong. Limited quantities of U.S. tallow are bought from time to time, but France is the major supplier. Aside from the major international soap manufacturers, there are in Senegal, as in other African countries, smaller, independent operators who might become customers if they could make contact with suppliers in the United States. Their requirements are considerably smaller than those of the major manufacturers, but at the same time there are many of them; taken together they comprise a rather sizable market.

As in most of the smaller, now-developing West African countries, there is in Senegal a growing broiler-type poultry industry. However, little or no feed is being produced locally. Imports supply the market almost entirely. There is fat (not always animal fat) in most of the formulated feeds, and to some extent there is an awareness of its value.

Self-sufficiency in production of feed ingredients is years away, as is the general use of animal fats in feed mixtures. In Liberia, all feed ingredients are imported, despite the fact that self-sufficiency is not impossible. At the moment, however, farmers are reluctant to produce surplus feed in the absence of an established cash market for grain.

Ivory Coast.--Ivory Coast, one of the most prosperous West African nations, maintains rather close economic and financial ties with France, making it somewhat difficult to maintain trade in products exported in competition with France. There is a steady market for small quantities of tallow for use in the country's largest soap factory located at Abidjan. Living standards are rising, and commercial soap is in demand from nearly all segments of the population.

The feed industry is small and likely to remain so for many years to come. There is no evidence that animal fat will be added to feed in the near future.

Ghana.--Ghana appeared to be one of the better prospects for U.S. tallow in Western Africa, but because of present economic problems it is difficult to determine what developments will affect this market.

One of the most modern soap plants in Africa is in operation at the port city of Tema, just a few miles from Accra. In addition, there is another small independent operator making an excellent product. Soapmakers have found it increasingly difficult to import enough tallow to maintain their operations. Import restrictions have been imposed because of foreign exchange problems.

There seems to be little doubt that Ghana could easily consume 15,000 tons to 20,000 tons of tallow or more per year. The demand within the country is adequate to absorb the tallow products at this level with no difficulty. It was ironic for the U.S. visitor to find in the hotels Polish soap--probably made with U.S. tallow--at a time when local manufacturers were faced with shutdowns for lack of tallow to process.

Nigeria.--U.S. tallow enters Nigeria over an ad valorem duty of 33-1/3 percent. The United States currently ships only 3,000 tons to 5,000 tons of tallow per year to this most populous country in Africa.

Palm oil is used almost to the exclusion of tallow because of the local price. Farmers sell palm oil and palm kernels to the Marketing Board at prices ranging nearly 40 percent below the world market price. The Board sells palm oil to soap makers at about the world price. Tallow suffers a disadvantage equal to the cost of freight plus duty.

Village soap makers buy palm oil from farmers at slightly higher prices than those paid by the Marketing Board, and are thus able to undersell nearly all competition in the market for lower quality, lower-priced laundry soaps.

Most livestock feeds are prepared from Nigerian corn and peanut meal. Protein (meat meal and fish meal) is imported over a 33-1/3 percent ad valorem duty. Feed rations do not contain added fat. It would not be practical to add animal fats to feeds in extremely hot areas, because of almost certain rancidity developing once feed reaches the farm and is stored under a tin roof.

Kenya.--Feed manufacturers in Kenya are aware of the value of adding fats to feed but do not do so because of the cost.

Soap is the only outlet for tallow in Kenya. Locally produced tallow is of good quality, but production falls far short of the industry's needs. Quantity-wise, Australia now provides most of the tallow but this could change if the industry becomes able to handle bulk shipments. U.S. shippers cannot match Australian drummed prices, but are competitive in bulk. Quality-wise, U.S. tallow was considered to be superior.

Kenya and Uganda together represent a market for 10,000 to 12,000 tons of tallow per year. Informed opinion holds that the market will expand to 20,000 tons within a few years. Continued promotion in the area appeared to be in order.

Rhodesia.--Rhodesia is another potential market for U.S. tallow in Africa. At present, Australian freight rates and a 5 percent duty preference put U.S. tallow at a disadvantage. Users of tallow indicated a preference for U.S. tallow provided it is competitively priced, c.i.f. Rhodesia.

Republic of South Africa.--The Republic of South Africa is currently the best dollar market for U.S. tallow in Africa. All of the available tallow is used for soap. Animal fats are not added to feed because other sources of fat are more economical.

Inland freight is a problem because of a continued shortage of rail cars. Buyers must arrange to get cars to port, timed to ship arrivals. Disruptions in shipping cause serious problems in the trade.

Domestic commercial soap consumption is increasing, largely on the strength of increasing purchasing power of the native Africans who make up the bulk of the population. At present, the European minority accounts for more than half of the market.

Several of the smaller independent soap makers meet their tallow requirements from suppliers in Botswana (formerly Bechuanaland) at less than world market prices for comparable grades delivered in drums. Tallow from Southwest Africa and Botswana is said to be equivalent in quality to U.S. prime grade. Outsiders will have difficulty making inroads into this market until small users gain access to bulk deliveries in small quantities.

## THE FAR EAST

In late 1965, a brief survey was made in the Far East area covering Korea, Taiwan, the Philippines, and Japan.

Korea.--The Korean market could probably absorb considerably more tallow than is now available. About 18,000 tons are imported annually from the United States, purchased with special assistance funds made available by the Agency for International Development (AID). Korea is emphasizing the development of industries to utilize raw materials that can be used to manufacture products for export. Thus, tallow is placed rather far down on the Government's priority list of commodities for which foreign exchange is made available. There are more than 160 registered soap companies in Korea, about 60 of which are active. Six are classified as large companies; these have about two-thirds of the business.

Taiwan.--Taiwan has become a rather sizable market for U.S. tallow. Large quantities have been supplied by the United States under P.L. 480, but in the future Taiwan is expected to become a steady dollar market. At the same time, Australian competition will intensify.

In most of the countries surveyed, tallow use in toilet soaps was found to be on the increase while detergents were taking increasing shares of the laundry soap market. In Taiwan, the production of toilet soaps is discouraged by a luxury tax of 20 percent, and other taxes totaling an additional 5 percent. Tallow in Taiwan is used primarily in the manufacture of laundry soap, much of which is consumed as toilet soap because of the lower price. Synthetic detergent production is expanding rapidly. Detergents are taking an increasing share of the laundry soap market, but their use probably will not reduce laundry soap production significantly, as long as the tax structure remains unchanged.

There are an estimated 3 million hogs on Taiwan and a large poultry population (mostly ducks). Hogs are fed a ration of corn and sweet potatoes, while ducks are raised on gleanings from the rice fields. A modern feed industry is developing, but there appears to be little likelihood of a rapid changeover to modern feeding practices, or a rapid change to use of feeds containing significant quantities of animal fats.

Philippines.--In the Philippines, the coconut provides most of the industrial oil consumed. Its principal use is in soapmaking, in direct contrast to soapmaking throughout the rest of the world where coconut oil accounts for 10 percent or less of total fats and oils used.

It would seem that the country could benefit economically from the substitution of greater quantities of less expensive animal fats in soapmaking, releasing coconut oil for export. Present duties and taxes now imposed make tallow almost prohibitively expensive.

## THE MIDDLE EAST AND MEDITERRANEAN

United Arab Republic (UAR).--Currently, the UAR is a market for about 150 million pounds of tallow per year. In recent years, most of it has been obtained from the United States under P.L. 480. Tallow enters both in bulk and in drums. However, bulk storage is a problem because only two soap companies have bulk facilities. Bulk tallow is moved from ship to factory on small barges while drums move overland.

Tallow is the major soap ingredient. The two plants visited blended 70 percent to 80 percent tallow with vegetable oils in their toilet soaps.

Plants and equipment are modern, and produce an excellent soap. Shortage of raw materials appears to be the factor limiting production. The potential UAR tallow market is considerably greater than the country's present ability to import.

Egypt is trying to develop a modern broiler industry. There is evidence that small quantities of tallow may one day find a market in poultry feed.

Lebanon.--Lebanon is a very small market for tallow. Vegetable oils are used almost exclusively in the manufacture of soap, for which tallow and fatty acids are reported to be uneconomical because of price. Palm oil is the chief soap ingredient. Fatty acids derived from palm oil were priced, c.i.f., at $50.00 per metric ton below the cost of tallow.

Edible tallow (animal ghee) is imported from Europe for use as margarine and cooking fat. It enters over a 25 percent import duty.

Large quantities of feed ingredients are imported each year to support a growing poultry industry. Imported feed concentrates contain 11 percent to 15 percent added fat. Formula feeds are sold containing 2 percent to 4 1/2 percent fat with meat and bonemeal added. Feed manufacturers and poultry producers expressed an interest in fats in feed. The feed industry appears to offer the best opportunity to increase exports to Lebanon.

Iran.--Iran has been a good outlet for U.S. tallow for a number of years. The market is stable and increasing at the rate of about 10 percent per year. Imported tallow is purchased for hard currency.

Most of the soap in Iran is made with tallow (imported) with small amounts of coconut and cottonseed oils added. Locally produced tallow comes mostly from mutton and is sold for edible purposes.

Bulk storage facilities are available. At the port of Khorramshahr on the Persian Gulf, facilities can handle up to 500 tons per day. Import duties, taxes, additional port costs, inland freight, and the like, add more than $60 a ton to the c.i.f. price of tallow. Other distribution costs are also high, contributing to the ultimate higher cost to consumers of the finished product.

There is no use of animal fat in feed. As is the case in many other countries in the Middle East, and elsewhere, oilseed cake is used as a feed ingredient after the oil has been removed by mechanical means. Oil content remains high, reducing the need to add additional fat to the resulting feed mix. It would appear profitable to remove a greater percentage of the vegetable oil and substitute the less expensive animal fat.

Pakistan.--Pakistan has developed into a major market for U.S. tallow in recent years, largely because of P.L. 480 exports since 1962. Cottonseed oil has been used extensively in production of soap in the absence of tallow, although the latter is preferred. All available tallow is used for soap, none in livestock feed; fat used in feed is vegetable, consisting of unexpelled vegetable oils remaining in the oilseed cake.

The major problem facing U.S.-Pakistani tallow trade is the critical foreign exchange situation confronting Pakistan. (In the absence of concessional sales lower-priced Asian tallows would take a large share of the business). Import licenses are issued by the government, based on capacity and production of individual plants. The duty applied is 10 percent on the landed cost for tallow, and 36 percent for fatty acid.

Pakistan is a country of more than 100 million people. It has 10 to 15 large soap plants. The demand for commercial soap is great, as is the capacity to produce it. Consumption of tallow could be doubled if the means of payment were more readily available.

Turkey.--Turkey is one of the few Middle Eastern countries producing a significant amount of tallow. Production is estimated at about 35,000 tons per year.

Tallow is State-traded. The Meat and Fish Administration purchases through the Turkish Supply Mission in Washington. No duties, as such, are applied. However, the importing agency marks up the price 45 percent to 50 percent when reselling to soapmakers.

Tallow is imported through the ports of Iskenderum, Izmir and Istanbul. The largest soap manufacturers are located in Istanbul, Gaziantes, Adana, and Izmir. Smaller operations are located throughout the country.

There are four government-operated rendering plants in Turkey. In addition to tallow production, these plants turn out hoof and hornmeal, and bloodmeal, as well as meat and bonemeal.

As in Pakistan, the Turkish soap industry could consume larger quantities of tallow if the foreign exchange were more readily available to pay for it. Turkey has received tallow under P.L. 480 in recent years.

The Middle Eastern market survey also included a brief look at the market situation in Greece. The Government of Greece is the sole importer of tallow. It also establishes prices at which it sells to industry.

There are no rendering plants in Greece, although there are several home renderers, operating primitive equipment, producing about 100 tons of rendered animal fat annually which is sold to the domestic soap industry.

Imports furnish the domestic industry with practically all of the tallow consumed. The United States is virtually the only supplier shipping about 7 million pounds, drummed, fancy tallow per year.

There is a 4.5-million-pound quota, reduced duty, exclusive of tallow imported under P.L. 480 when such imports are made. Under the quota, duties, taxes, and the like are imposed at the rate of 14 percent on the c.i.f. price. Under the regular duty system the rate applied is about 70 percent on the c.i.f. price.

Tallow is used almost exclusively for toilet soap. Laundry soap production is based on the use of byproducts derived from the olive oil industry, and the processing of cottonseed and other oilseeds. Formerly, all of these byproducts were used in soapmaking. However, over the last 5 years the use of synthetic detergents has cut the consumption of laundry soap in half. During the same period, a gradual increase has been noted in the consumption of toilet soap.

# APPENDIX

Table 1.--Tallow and greases: U.S. and world production and exports, average 1956-60, annual 1961-65[1]

| Year | World | | United States | | | |
|---|---|---|---|---|---|---|
| | Production | Exports | Production | Exports | Exports as percent of World exports | Exports as percent of U.S. production |
| | Million pounds | Million pounds | Million pounds | Million pounds | Percent | Percent |
| Average: | | | | | | |
| 1956-60 | 6,340 | 1,990 | 3,507 | 1,436 | 72 | 41 |
| 1961 | 7,190 | 2,552 | 4,080 | 1,826 | 72 | 45 |
| 1962 | 7,490 | 2,422 | 4,175 | 1,617 | 68 | 39 |
| 1963 | 8,170 | 2,850 | 4,586 | 1,890 | 66 | 41 |
| 1964 | 8,810 | 3,380 | 5,241 | 2,421 | 72 | 46 |
| 1965 | 8,570 | 3,100 | 4,895 | 2,148 | 69 | 44 |

[1] Includes edible and inedible tallow and greases.

Table 2.--Tallow and greases: Imports into specified countries, average 1956-60, annual 1962-65[1]

| Country | Average 1956-60 | 1962 | 1963 | 1964 | 1965[2] |
|---|---|---|---|---|---|
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds |
| Japan | 282 | 330 | 433 | 500 | 511 |
| Netherlands | 229 | 222 | 263 | 321 | 259 |
| United Kingdom | 154 | 149 | 158 | 233 | 215 |
| Italy | 260 | 257 | 271 | 204 | 201 |
| Germany, West | 137 | 172 | 163 | 187 | 186 |
| USSR (Europe and Asia) | [3] 5 | [4] 66 | [4] 49 | [4] 137 | [4] 168 |
| Spain | 46 | 121 | 164 | 130 | 129 |
| India | 12 | 15 | 12 | 13 | 112 |
| Poland | [3] 59 | 72 | 87 | 119 | [4] 104 |
| United Arab Republic | 74 | 122 | 114 | 138 | 98 |
| South Africa, Republic of | 88 | 81 | 86 | 78 | 88 |
| France | 19 | 23 | 53 | 63 | 81 |
| Belgium and Luxembourg | 46 | 39 | 47 | 84 | 71 |
| Colombia | 22 | 35 | 38 | 51 | 47 |
| China, Taiwan | 28 | 37 | 49 | 46 | [4] 39 |
| Yugoslavia | 23 | 34 | 27 | 13 | [4] 35 |
| Pakistan | 16 | 69 | 65 | 54 | [4] 34 |
| Korea, South | 19 | 32 | 45 | 40 | [4] 34 |
| Iran | [3] 11 | 30 | 24 | 24 | [4] 28 |
| Canada | 24 | 31 | 38 | 34 | 23 |
| Peru | 12 | 21 | 17 | 55 | 22 |
| Malaysia | 15 | 24 | 24 | 27 | 22 |
| Philippines | 14 | 20 | 23 | 26 | 18 |
| Turkey (Europe and Asia) | [3] 11 | 33 | 68 | 60 | [4] 13 |
| Others | 159 | 230 | 282 | 341 | 322 |
| Total | 1,765 | 2,265 | 2,600 | 2,978 | 2,860 |

[1] Includes edible and inedible tallow and greases. [2] Preliminary. [3] Less than a 5-year average. [4] Oil World.

Table 3.--Tallow and greases: Exports from specified countries, average 1956-60, annual 1962-65

| Country | Average 1956-60 | 1962 | 1963 | 1964 | 1965[1] |
|---|---|---|---|---|---|
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds |
| United States[2] | 1,436 | 1,617 | 1,890 | 2,421 | 2,148 |
| Australia[3] | 134 | 231 | 268 | 242 | 224 |
| Germany, West | 43 | 107 | 116 | 120 | 138 |
| Canada | 72 | 96 | 112 | 140 | 137 |
| New Zealand | 118 | 139 | 131 | 165 | 123 |
| Argentina | 25 | 17 | 80 | 55 | 56 |
| France | 32 | 45 | 71 | 54 | 51 |
| Denmark | 21 | 48 | 43 | 40 | 50 |
| Sweden | 18 | 27 | 29 | 29 | 37 |
| Netherlands | 14 | 14 | 22 | 23 | 36 |
| Belgium and Luxembourg | 30 | 17 | 19 | 17 | 22 |
| Others | [4] 47 | 64 | 69 | 74 | 78 |
| Total | 1,990 | 2,422 | 2,850 | 3,380 | 3,100 |

[1] Preliminary. [2] Includes edible and inedible tallow and greases. [3] Year ending June 30. [4] Estimated.

Table 4.--Tallow and greases: Estimated production, specified countries, average 1956-60, annual 1962-65[1]

| Continent and country | Average 1956-60 | 1962 | 1963 | 1964 | 1965[2] |
|---|---|---|---|---|---|
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds |
| North America: | | | | | |
| Canada | 180 | 206 | 222 | 254 | 259 |
| United States | 3,507 | 4,175 | 4,586 | 5,241 | 4,893 |
| Mexico | 42 | 47 | 50 | 46 | 49 |
| Total North America[3] | 3,760 | 4,460 | 4,890 | 5,570 | 5,230 |
| South America: | | | | | |
| Argentina | 275 | 288 | 310 | 249 | 260 |
| Brazil | 122 | 115 | 113 | 114 | 111 |
| Chile | 33 | 35 | 36 | 36 | 37 |
| Colombia | 63 | 72 | 81 | 80 | 81 |
| Uruguay | 47 | 47 | 52 | 59 | 63 |
| Total South America[3] | 560 | 580 | 620 | 560 | 580 |
| Europe: | | | | | |
| Western | | | | | |
| EEC | | | | | |
| Belgium and Luxembourg | 37 | 42 | 43 | 39 | 38 |
| France | 197 | 254 | 254 | 252 | 295 |
| Germany, West | 92 | 147 | 182 | 199 | 180 |
| Italy | 72 | 95 | 117 | 106 | 101 |
| Netherlands | 65 | 84 | 95 | 77 | 84 |
| Total EEC | 463 | 622 | 691 | 673 | 698 |
| Denmark | 56 | 72 | 78 | 86 | 95 |
| Sweden | 25 | 51 | 53 | 51 | 60 |
| United Kingdom | 276 | 269 | 291 | 291 | 302 |
| Total Western Europe[3] | 910 | 1,140 | 1,230 | 1,230 | 1,270 |
| Total Eastern Europe[3] | 120 | 160 | 160 | 160 | 160 |
| Total Europe[3] | 1,030 | 1,300 | 1,390 | 1,390 | 1,430 |
| USSR (Europe and Asia) | 370 | 440 | 480 | 470 | 490 |
| Africa: | | | | | |
| South Africa, Rep. of | 59 | 66 | 76 | 69 | 73 |
| Total Africa[3] | 70 | 80 | 90 | 90 | 90 |
| Asia: | | | | | |
| Iran | 49 | 52 | 52 | 53 | 53 |
| Turkey (Europe and Asia) | 11 | 13 | 13 | 14 | 14 |
| Japan | 24 | 26 | 33 | 39 | 39 |
| Total Asia[3] | 90 | 100 | 110 | 110 | 110 |
| Oceania: | | | | | |
| Australia[4] | 317 | 345 | 390 | 417 | 437 |
| New Zealand[5] | 145 | 185 | 202 | 199 | 200 |
| Total Oceania | 460 | 530 | 590 | 620 | 640 |
| Total World[3] | 6,340 | 7,490 | 8,170 | 8,810 | 8,570 |

[1] Includes edible and inedible tallow and greases. [2] Preliminary. [3] Includes an allowance for minor producing countries not shown. [4] Year ending June 30. [5] Year ending September 30.

Table 5.--Production of soap and detergents in selected countries, average 1957-59, annual 1962-64

| Country | Total soap production | | | |
|---|---|---|---|---|
| | Average 1957-59 | 1962 | 1963 | 1964 |
| | Million pounds | Million pounds | Million pounds | Million pounds |
| United States | 1,400 | 1,230 | 1,211 | (1) |
| Canada | 113 | 102 | 99 | 95 |
| Mexico | (1) | 224 | 244 | 257 |
| El Salvador | [2] 9 | 12 | 13 | 15 |
| Guatemala | [2] 22 | 26 | 31 | 32 |
| Argentina | [2] 430 | 500 | 490 | 500 |
| Peru | 35 | (1) | 43 | 48 |
| Venezuela | [2] 42 | 55 | 56 | 64 |
| Netherlands | [2] 125 | 112 | 99 | (1) |
| Germany, West | (1) | 225 | 220 | 238 |
| Italy | (1) | 408 | 397 | 385 |
| France | (1) | 422 | 361 | 359 |
| Switzerland | [2] 22 | 23 | 30 | 33 |
| Yugoslavia | 68 | 73 | 75 | 77 |
| Denmark | [2] 51 | 55 | 50 | (1) |
| Japan | 769 | 571 | 496 | 444 |
| Philippines | 180 | 183 | 168 | 136 |
| Australia | .236 | 210 | 219 | 211 |

| Country | Total detergent production | | | |
|---|---|---|---|---|
| | Average 1957-59 | 1962 | 1963 | 1964 |
| | Million pounds | Million pounds | Million pounds | Million pounds |
| United States | 3,390 | 4,000 | 4,120 | (1) |
| Canada | (1) | 285 | 313 | (1) |
| Mexico | (1) | 260 | 287 | 320 |
| El Salvador | (1) | (1) | (1) | (1) |
| Guatemala | (3) | 3 | 4 | 3 |
| Argentina | (1) | 829 | 871 | 920 |
| Peru | 6 | (1) | 20 | 22 |
| Venezuela | [2] 50 | 60 | 55 | 57 |
| Netherlands | [2] 125 | 145 | 164 | (1) |
| Germany, West | (1) | 1,085 | 1,162 | 1,245 |
| Italy | (1) | 68 | 82 | 93 |
| France | (1) | (1) | (1) | (1) |
| Switzerland | (1) | 68 | 83 | 92 |
| Yugoslavia | [2] 45 | 54 | 67 | 86 |
| Denmark | [2] 65 | 74 | 68 | (1) |
| Japan | [2] 190 | 417 | 569 | 666 |
| Philippines | 10 | 20 | 21 | 19 |
| Australia | (1) | 117 | 129 | 145 |

[1] Not available. [2] 1960; 1957-59 average not available. [3] Less than 1 million pounds.

Table 6.--Tallow and greases[1]: U.S. exports by country of destination, average 1956-60, annual 1962-65

| Continent and country | Average 1956-60 | 1962 | 1963 | 1964 | 1965[2] |
|---|---|---|---|---|---|
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds |
| North America: | | | | | |
| Canada | 22 | 26 | 34 | 36 | 21 |
| El Salvador | 3 | 15 | 10 | 20 | 10 |
| Guatemala | 8 | 13 | 23 | 16 | 20 |
| Mexico | 35 | 4 | 3 | 3 | 4 |
| Cuba | 31 | -- | -- | -- | -- |
| Dominican Republic | 5 | 8 | 6 | 11 | 8 |
| Other | 9 | 14 | 19 | 27 | 25 |
| Total | 113 | 80 | 95 | 113 | 88 |
| South America: | | | | | |
| Argentina | ([3]) | ([3]) | ([3]) | 29 | 5 |
| Chile | 2 | 4 | ([3]) | ([3]) | ([3]) |
| Colombia | 20 | 28 | 20 | 31 | 22 |
| Ecuador | 11 | 20 | 24 | 29 | 21 |
| Peru | 9 | 20 | 23 | 53 | 30 |
| Venezuela | 7 | 13 | 13 | 30 | 15 |
| Other | 2 | 2 | 3 | 3 | 1 |
| Total | 51 | 87 | 83 | 175 | 94 |
| Europe: | | | | | |
| EEC: | | | | | |
| Belgium | 42 | 17 | 22 | 35 | 12 |
| France | 11 | 6 | 15 | 29 | 33 |
| Germany, West | 86 | 92 | 86 | 105 | 71 |
| Italy | 270 | 231 | 180 | 180 | 115 |
| Netherlands | 228 | 188 | 237 | 263 | 207 |
| Total EEC | 637 | 534 | 540 | 612 | 438 |
| Greece | 6 | 3 | 5 | 9 | 7 |
| Ireland | 2 | ([3]) | 1 | 3 | ([3]) |
| Norway | 2 | 3 | 3 | 4 | 4 |
| Spain | 25 | 93 | 124 | 108 | 92 |
| Switzerland | 14 | 22 | 37 | 57 | 46 |
| United Kingdom | 17 | 20 | 22 | 63 | 82 |
| Poland | 43 | 66 | 77 | 122 | 95 |
| Yugoslavia | 24 | 5 | 25 | 13 | 35 |
| Other | 15 | 4 | 20 | 25 | 27 |
| Total Europe | 785 | 750 | 854 | 1,016 | 826 |
| USSR (Europe and Asia) | 5 | 66 | 33 | 122 | 186 |
| Africa: | | | | | |
| Algeria | ([3]) | -- | 1 | 15 | 24 |
| United Arab Republic | 60 | 96 | 118 | 117 | 80 |
| Morocco | 12 | 22 | 22 | 22 | 27 |
| Ghana | -- | ([3]) | 12 | 29 | 16 |
| South Africa, Republic of | 51 | 13 | 23 | 40 | 37 |
| Other | 4 | 7 | 10 | 22 | 17 |
| Total | 127 | 138 | 186 | 245 | 201 |
| Asia: | | | | | |
| Iran | 14 | 29 | 44 | 31 | 28 |
| Turkey (Europe and Asia) | 9 | 32 | 47 | 65 | 14 |
| China, Taiwan | 23 | 34 | 55 | 52 | 39 |
| India | ([3]) | ([3]) | 1 | 1 | 91 |
| Japan | 259 | 268 | 358 | 456 | 465 |
| Korea, South | 19 | 37 | 30 | 43 | 34 |
| Pakistan | 8 | 53 | 58 | 61 | 34 |
| Philippines | 15 | 21 | 22 | 20 | 14 |
| Other | 8 | 9 | 13 | 8 | 10 |
| Total[4] | 355 | 483 | 628 | 737 | 729 |
| Total world | 1,436 | 1,604 | 1,879 | 2,408 | 2,124 |

[1] Includes edible tallow, animal greases and fats, animal oils, n.e.s., oleic acid or red oil and stearic acid. [2] Preliminary. [3] Less than 500,000 pounds. [4] Includes shipments to Oceania.

Table 7.--U.S. exports of inedible tallow under P.L. 480, Titles I and IV, by country of destination, 1956-58 and 1961-65* [1]

| Country of destination | 1956 | | | | 1957 | | | | 1958 | | | | 1961 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. |
| | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. |
| Title I | | | | | | | | | | | | | | | | |
| China, Taiwan | -- | -- | 0.1 | 10.9 | 0.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ecuador | -- | -- | -- | -- | -- | -- | 2.3 | 2.6 | 0.5 | -- | -- | -- | -- | -- | -- | -- |
| Israel | -- | -- | -- | 1.1 | -- | -- | -- | -- | 2.5 | 1.6 | -- | -- | -- | -- | -- | -- |
| Pakistan | -- | -- | -- | -- | -- | -- | -- | -- | .8 | 1.3 | -- | 0.4 | -- | -- | -- | -- |
| Philippines | -- | -- | -- | -- | -- | -- | .4 | 3.7 | .6 | -- | -- | -- | -- | -- | -- | -- |
| Poland | -- | -- | -- | -- | -- | -- | -- | -- | .8 | -- | 30.2 | 6.4 | -- | -- | -- | -- |
| Spain | -- | 10.6 | 9.1 | 2.2 | 11.3 | 19.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Turkey | -- | -- | 7.4 | 2.7 | 6.8 | 27.6 | -- | .5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Yugoslavia | -- | -- | -- | -- | 11.4 | 9.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.4 |
| Total Title I | -- | 10.6 | 16.6 | 16.9 | 29.8 | 56.6 | 2.7 | 6.8 | 5.1 | 3.0 | 30.2 | 6.8 | -- | -- | -- | 21.4 |
| Accumulative | -- | -- | 27.2 | 44.1 | -- | 86.4 | 89.1 | 95.9 | -- | 8.1 | 38.3 | 45.1 | -- | -- | -- | 21.4 |

| Country of destination | 1962 | | | | 1963 | | | | 1964 | | | | 1965 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. | Jan.-Mar. | Apr.-June | July-Sept. | Oct.-Dec. |
| | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. |
| Title I | | | | | | | | | | | | | | | | |
| Bolivia | -- | -- | -- | -- | -- | (2) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| China, Taiwan | 0.1 | 10.2 | 8.0 | 7.1 | 5.3 | 14.0 | 17.7 | (2) | 9.4 | 12.7 | 1.5 | 1.1 | -- | -- | -- | -- |
| Colombia | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.1 | 2.2 | -- | -- |
| Greece | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.8 | -- | -- | -- | -- | -- | -- |
| Guinea | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.6 | 1.9 | -- | -- | -- |
| India | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 48.0 | 49.1 | -- |
| Israel | -- | -- | -- | -- | -- | 1.2 | 1.3 | 2.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| Ivory Coast | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.2 | 2.2 | -- | -- | -- | -- |
| Korea | -- | -- | 16.2 | 11.3 | 13.1 | 17.6 | -- | -- | 3.9 | 12.0 | -- | -- | -- | -- | -- | -- |
| Pakistan | -- | 40.4 | 3.4 | 5.6 | .6 | 48.0 | 2.2 | 10.6 | 16.5 | 30.7 | -- | -- | 38.2 | 1.9 | -- | 7.5 |
| Poland | 3.5 | 23.0 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Turkey | -- | 5.5 | 27.5 | -- | -- | 15.7 | 28.7 | 1.1 | 14.3 | 19.8 | 20.2 | 12.5 | -- | -- | -- | -- |
| United Arab Republic | 13.4 | 26.4 | 12.0 | -- | 38.2 | 27.6 | 5.6 | 27.5 | 18.9 | 44.4 | -- | 13.5 | 1.1 | -- | -- | -- |
| Total Title I | 17.0 | 105.6 | 69.1 | 23.9 | 57.1 | 124.1 | 55.6 | 41.9 | 63.1 | 123.5 | 24.9 | 30.9 | 45.3 | 52.1 | 49.1 | 7.5 |
| Accumulative | -- | 122.6 | 191.7 | 215.6 | -- | 181.2 | 236.8 | 278.7 | -- | 186.6 | 211.4 | 242.3 | -- | 97.4 | 146.5 | 154.0 |
| Title IV | | | | | | | | | | | | | | | | |
| China, Taiwan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.1 | 13.7 |
| Colombia | -- | -- | -- | -- | -- | -- | 2.1 | .1 | 1.7 | -- | -- | -- | -- | -- | -- | -- |
| Ecuador | -- | -- | -- | -- | -- | 1.6 | 1.8 | 3.7 | -- | -- | .3 | -- | -- | -- | -- | -- |
| Greece | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 | .6 | -- |
| Yugoslavia | -- | -- | -- | -- | 5.6 | 20.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Title IV | -- | -- | -- | -- | 5.6 | 22.1 | 3.9 | 3.1 | 1.7 | -- | .3 | -- | -- | 3.3 | 8.7 | 13.7 |
| Accumulative | -- | -- | -- | -- | -- | 27.7 | 31.5 | 35.4 | -- | 1.7 | 2.0 | 2.0 | -- | -- | 12.1 | 25.7 |
| Total Title I and IV | 17.0 | 105.6 | 69.1 | 23.9 | 62.7 | 146.2 | 59.4 | 45.7 | 64.8 | 123.5 | 25.2 | 30.9 | 45.3 | 55.5 | 57.8 | 21.2 |
| Accumulative | -- | 122.6 | 191.7 | 215.6 | -- | 208.9 | 268.3 | 314.1 | -- | 188.2 | 213.4 | 244.3 | -- | 100.8 | 158.6 | 179.8 |

* Items may not add as a result of rounding. [1] Inedible tallow removed from programming under PL-480 in 1959 and 1960; no inedible tallow programmed under Title IV until 1963. [2] Less than 50,000 pounds.

Table 8.--Tallow and greases, estimated apparent consumption in specified countries, average 1957-59, annual 1962-64

| Country | Soap industry | | | | Animal feeds | | | | Food uses | | | | Other industrial uses | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Average 1957-59 | 1962 | 1963 | 1964 | Average 1957-59 | 1962 | 1963 | 1964 | Average 1957-59 | 1962 | 1963 | 1964 | Average 1957-59 | 1962 | 1963 | 1964 |
| | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. |
| United States | 735.0 | 683.4 | 684.0 | 690.6 | 486.0 | 822.3 | 782.4 | 838.1 | [1] 286.0 | [1] 416.5 | [1] 521.0 | [1] 543.4 | 573.6 | 657.0 | 740.1 | 772.8 |
| Canada | 114.6 | 62.1 | 62.5 | 62.0 | [2] 21.4 | 31.5 | 42.0 | 45.0 | (3) | 30.4 | 33.3 | 42.8 | [2] 15.0 | (3) | (3) | 30.0 |
| Mexico | 92.2 | (3) | (3) | 30.0 | -- | -- | (4) | (4) | -- | -- | -- | -- | -- | (3) | (3) | 1.3 |
| El Salvador | [2] 8.1 | 14.1 | 14.6 | 15.4 | -- | .3 | .4 | .6 | -- | -- | -- | -- | -- | -- | -- | -- |
| Guatemala | 16.0 | 23.7 | 24.2 | 24.6 | -- | (3) | 1.3 | 1.5 | -- | -- | -- | -- | .5 | (4) | (4) | (4) |
| Argentina | (3) | (3) | (3) | 250.0 | -- | (3) | (3) | 22.0 | (3) | (3) | (3) | 130.0 | (3) | (3) | (3) | 2.0 |
| Colombia | 98.8 | (3) | (3) | 122.0 | -- | -- | -- | -- | [5] 11.0 | (3) | (3) | 8.0 | 8.6 | (3) | (3) | 4.0 |
| Ecuador | 8.8 | (3) | (3) | 22.0 | -- | -- | -- | -- | 4.0 | (3) | (3) | 11.0 | -- | -- | -- | -- |
| Peru | 18.3 | (3) | 7.6 | 9.8 | -- | (3) | (3) | (4) | 2.2 | (3) | (3) | 6.6 | (3) | (3) | 1.0 | 1.0 |
| Uruguay | 32.6 | (3) | (3) | 17.6 | -- | (3) | (3) | 2.0 | (3) | (3) | (3) | 25.0 | -- | -- | -- | -- |
| Venezuela | 10.5 | (3) | (3) | 14.3 | -- | (3) | (3) | 8.8 | -- | -- | -- | -- | (3) | (3) | (3) | .8 |
| Belgium and Luxembourg | 34.1 | (3) | (3) | (3) | -- | (3) | (3) | (3) | -- | -- | -- | -- | 2.6 | (3) | (3) | (3) |
| Netherlands | 43.6 | 19.7 | 13.9 | 11.8 | (3) | 34.7 | 44.8 | 64.2 | (3) | 31.0 | 33.3 | 38.8 | 137.0 | 61.5 | 68.9 | 73.0 |
| Germany, West | 55.3 | 86.0 | 84.3 | 77.8 | -- | (3) | (3) | 55.6 | (3) | (3) | (3) | 24.0 | [5] 83.0 | (3) | (3) | 22.1 |
| Italy | 291.5 | 261.0 | 245.0 | 238.0 | -- | 3.1 | 6.0 | 19.0 | (3) | 46.0 | 40.0 | 30.0 | 29.1 | 20.9 | 24.2 | 33.0 |
| France | 157.0 | 170.4 | 164.2 | 154.8 | -- | 20.0 | 58.4 | 59.0 | (3) | 50.0 | 36.8 | 36.4 | 44.5 | 11.0 | 11.0 | 13.5 |
| Spain | 155.3 | (3) | (3) | 148.0 | -- | (3) | (3) | 60.0 | (3) | (3) | (3) | 30.0 | 27.4 | (3) | (3) | 55.0 |
| Switzerland | 9.4 | 15.9 | 15.6 | 17.0 | -- | 2.7 | 3.3 | 4.3 | (3) | 7.2 | 7.4 | 7.9 | 11.5 | .1 | .1 | .1 |
| Greece | 6.8 | 1.6 | 1.9 | 2.0 | -- | -- | -- | -- | -- | -- | -- | -- | .2 | .2 | .2 | .2 |
| Yugoslavia | (3) | (3) | (3) | 16.1 | -- | -- | 1.0 | 1.0 | (3) | (3) | (3) | 1.0 | -- | (3) | (3) | 4.7 |
| Ireland | (3) | (3) | (3) | 11.2 | -- | (3) | (3) | 2.0 | (3) | (3) | (3) | 9.8 | -- | (3) | (3) | 4.6 |
| United Kingdom | 217.5 | (3) | (3) | 362.0 | 1.8 | (3) | (3) | 90.0 | 9.0 | (3) | (3) | 34.0 | 1.5 | (3) | (3) | 3.0 |
| Denmark | 24.5 | 14.2 | 13.6 | 13.5 | (3) | 13.2 | 22.0 | 35.3 | [2] 10.0 | 13.9 | 11.9 | 11.0 | -- | 3.0 | 2.6 | 2.4 |
| Morocco | [2] 21.1 | 24.1 | 23.2 | 21.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S. Africa, Rep. of | 89.8 | 93.0 | 99.0 | 112.0 | -- | -- | -- | (4) | -- | -- | -- | -- | -- | -- | -- | -- |
| United Arab Republic | 68.0 | 111.9 | 111.7 | 141.1 | -- | -- | -- | -- | (3) | 12.0 | 9.1 | 13.2 | -- | -- | -- | -- |
| Japan | 222.0 | 176.6 | 166.6 | 146.4 | -- | 5.5 | 6.6 | 7.7 | 14.0 | 53.9 | 76.0 | 91.7 | 37.7 | 138.9 | 176.0 | 230.7 |
| Philippines | 13.2 | 19.6 | 22.6 | 25.3 | -- | -- | -- | -- | -- | -- | -- | -- | .1 | 1.0 | 1.2 | 1.3 |
| Malaysia | 8.7 | 23.4 | 23.2 | 27.0 | -- | -- | -- | -- | 2.0 | 1.5 | .9 | 1.0 | -- | -- | -- | -- |
| Pakistan | [2] 4.4 | 40.0 | 65.0 | 61.6 | -- | -- | -- | -- | (3) | 7.0 | 7.0 | 7.0 | (4) | -- | -- | -- |
| Australia | 133.0 | 97.8 | 95.9 | 105.0 | -- | 2.0 | 2.0 | 2.5 | [2] 90.0 | 98.0 | 105.6 | 112.6 | 28.9 | 100.0 | 101.0 | 122.0 |
| New Zealand | 22.3 | 26.0 | 27.0 | 26.0 | -- | -- | (4) | (4) | [2] 14.0 | 16.6 | 15.9 | 18.4 | -- | 1.0 | 1.0 | 1.0 |

[1] Edible tallow, produced in Federally-inspected plants. [2] Less than 3-year average. [3] Not available. [4] Less than 50,000 pounds. [5] May contain fatty acid other than that derived from tallow.

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